

WHAT IS CLAIMED IS:

1. A method for handing over a terminal from a first base station to a second base station in a mobile communication system while the terminal is in communication with the first base station, wherein said mobile communication system includes said first base station for providing a communication service in a first communication mode, a first base station controller connected with said first base station and a first mobile switching center, said second base station for providing a communication service in a second communication mode, said second communication mode being different from said first communication mode, a second base station controller connected with said second base station and a second mobile switching center, and a roaming gateway for performing a standard conversion operation with respect to messages transmitted and received between said first mobile switching center and said second mobile switching center, and wherein said method comprises:

a) controlling said terminal by said first base station controller such that said terminal performs an initialization operation based on said second communication mode with said second base station, upon determining that said terminal must hand over to said second base station;

b) notifying said first mobile switching center by said first base station controller that said terminal has completed said second communication mode-based initialization operation, if said terminal completes said second communication mode-based initialization operation with said second base station;

c) notifying said second mobile switching center by said first mobile switching center, via said roaming gateway that said terminal must hand over to said second base station;

d) controlling said second base station controller by said second mobile switching center such that said second base station pages said terminal;

e) notifying said first mobile switching center by said second mobile switching center via said roaming gateway that said terminal is ready to hand over to said second base station, upon recognizing that said second base station controller has completed the paging of said terminal;

f) controlling said second mobile switching center by said roaming gateway, such that said second base station controller sets up a call with said terminal, as said terminal is ready to hand over to said second base station;

5 g) notifying said first mobile switching center by said second mobile switching center via said roaming gateway that the call setup with said terminal has been completed, upon recognizing that said second base station controller has completed said call setup with said terminal; and

10 h) controlling said first base station controller by said first mobile switching center to cause said first base station controller to releases current communication of said terminal with said first base station, as said call setup with said terminal is completed.

2. The method as set forth in claim 1, wherein said first mobile switching center is adapted to send a message including an international mobile subscriber identity of said terminal to said roaming gateway to notify said second mobile switching center that said terminal must hand over to said second base station.

15 3. The method as set forth in claim 2, wherein said roaming gateway is adapted to send a message including only a mobile identification number of said international mobile subscriber identity of said terminal to said second mobile switching center to notify said second mobile switching center that said terminal must hand over to said second base station.

20 4. The method as set forth in claim 2, wherein said roaming gateway is adapted to send a message including said mobile identification number and a circuit identity code to said second mobile switching center to control said second mobile switching center such that said second base station controller sets up said call with said terminal.

25 5. The method as set forth in claim 1, wherein said first base station controller is adapted to determine that said terminal must hand over to said second base station, when neighbor cell information of said terminal is insufficient.

6. The method as set forth in claim 1, wherein said roaming gateway is adapted to perform standard mapping between said first communication mode of said first mobile switching center and said second communication mode of said second mobile switching center.

5 7. The method as set forth in claim 1, wherein said first communication mode is an asynchronous communication mode and said second communication mode is a synchronous communication mode.

10 8. A system for handing over a terminal from a first base station to a second base station in a mobile communication system while the terminal is in communication with the first base station, said first base station providing a communication service in a first communication mode, said second base station providing a communication service in a second communication mode, said second communication mode being different from said first communication mode, said system comprising:

15 a first base station controller for controlling said terminal upon determining that said terminal must hand over to said second base station, such that said terminal performs an initialization operation based on said second communication mode with said second base station, notifying a first mobile switching center that said terminal has completed said second communication mode-based initialization operation, upon recognizing that said terminal has completed said second communication mode-based initialization operation,
20 and then releasing a call currently set up with said terminal if said terminal hands over to said second base station;

25 said first mobile switching center for notifying a second mobile switching center to which said second base station belongs, via a roaming gateway, that said terminal must hand over to said second base station, upon recognizing that said terminal has completed said second communication mode-based initialization operation, and then controlling said first base station controller to release said call currently set up with said terminal, upon recognizing that said terminal is ready to hand over to said second base station;

 said second mobile switching center for controlling a second base station controller to which said second base station is connected if said second mobile switching center is

notified that said terminal must hand over to said second base station,, such that said second mobile switching center pages said terminal, notifying said first mobile switching center via said roaming gateway that said terminal is ready to hand over to said second base station, upon recognizing that said second base station controller has completed the paging of said terminal, and then notifying said first mobile switching center via said roaming gateway that a second communication mode-based call setup with said terminal has been completed, upon recognizing that said second base station controller has completed the call setup with said terminal according to a predetermined control;

said second base station controller for paging said terminal under the control of said second mobile switching center and performing said call setup with said terminal after completing the paging of said terminal; and

said roaming gateway for performing a standard conversion operation with respect to messages transmitted and received between said first mobile switching center and said second mobile switching center.

9. The system as set forth in claim 8, wherein said roaming gateway is adapted to detect a standard of an incoming message from said first mobile switching center or said second mobile switching center and, if the detected standard is different from that of said second or first mobile switching center to which said message is to be transferred, map said standard of said message to be conformable to said standard of said second or first mobile switching center to which said message is to be transferred.

10. The system as set forth in claim 8, wherein said first mobile switching center is adapted to send a message including an international mobile subscriber identity of said terminal to said roaming gateway to notify said second mobile switching center that said terminal must hand over to said second base station.

11. The system as set forth in claim 10, wherein said roaming gateway is adapted to send a message including only a mobile identification number of said international mobile subscriber identity of said terminal to said second mobile switching center to notify said second mobile switching center that said terminal must hand over to said second base

station.

12. The system as set forth in claim 10, wherein said roaming gateway is adapted to send a message including said mobile identification number and a circuit identity code to said second mobile switching center to control said second mobile switching center such
5 that said second base station controller performs said call setup with said terminal.

13. The system as set forth in claim 8, wherein said first base station controller is adapted to determine that said terminal must hand over to said second base station, when neighbor cell information of said terminal is insufficient.

14. The system as set forth in claim 8, wherein said first communication mode is
10 an asynchronous communication mode and said second communication mode is a synchronous communication mode.

15. A method for handing over a terminal from a first base station to a second base station in a mobile communication system while the terminal is in communication with the first base station, said mobile communication system including said first base station for
15 providing a communication service in a first communication mode, a first base station controller connected with said first base station, said second base station for providing a communication service in a second communication mode, said second communication mode being different from said first communication mode, and a second base station controller connected with said second base station, said method comprising

20 a) receiving from said first base station controller a notification that said terminal must hand over from said first base station to said second base station; and

b) performing an initialization operation for communication with said second base station in said second communication mode upon receiving said notification, and then notifying said first base station controller that said terminal is ready to communicate in said
25 second communication mode.

16. The method as set forth in claim 15, further comprising the step of:

c) releasing current communication of said terminal with said first base station after said terminal is ready to communicate in said second communication mode.

17. The method as set forth in claim 15, wherein said first base station controller is adapted to determine that said terminal must hand over from said first base station to
5 said second base station, when neighbor cell information of said terminal is insufficient.

18. A method for handing over a terminal from a first base station to a second base station in a mobile communication system while the terminal is in communication with the first base station, said mobile communication system including said first base station for providing a communication service in a first communication mode, a first base station
10 controller connected with said first base station, said second base station for providing a communication service in a second communication mode, said second communication mode being different from said first communication mode, and a second base station controller connected with said second base station, said method comprising:

a) notifying said terminal that said terminal will hand over from said first base
15 station to said second base station upon determining that said terminal must hand over from said first base station to said second base station; and

b) controlling said second base station controller to set up a call with said terminal upon receiving from said terminal a notification about the fact that said terminal is ready to communicate in said second communication mode.

20 19. The method as set forth in claim 18, wherein said step a) further comprises determining that said terminal must hand over from said first base station to said second base station, when neighbor cell information received from said terminal is insufficient.

20. The method as set forth in claim 18, further comprising:
25 c) releasing current communication of said terminal based on said first communication mode upon receiving from said terminal said notification about the fact that said terminal is ready to communicate in said second communication mode.